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EXAMINER	
REPKO, JASON MICHAEL	

ART UNIT	PAPER NUMBER
2628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/792,368	KAYE ET AL.	
	Examiner	Art Unit	
	Jason M. Repko	2671	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-52 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-52 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 02 March 2004 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. The limitations recited in claims 1-17 are not supported in 09/085,746, 09/819,420, 10/029,625, and 10/147,380, and therefore do not receive the benefit of the earlier filing date.

2. The limitations recited in claims 37, 41-43 and 51-52 are not supported in 09/085,746, and therefore do not receive the benefit of the earlier filing date.

Claim Rejections - 35 USC § 101

3. Claims 1-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

4. The method recited in claims 1-17 does not result in a physical transformation nor does it provide a tangible result such as displaying an image.

5. To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 as non-statutory subject matter are further rejected as set forth below in anticipation of applicant amending the claims to place them within the four categories of invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002

do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. Claims 18-26 rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,929,859 to Meijers.

8. With regard to claim 25, Meijers discloses "a method for providing three-dimensional images, comprising: receiving or accessing (*lines 39-42 of column 5*) image data created by scaling depth and/or hidden surface area reconstruction information associated with three-dimensional images (*lines 4-5 of column 2: "The amount of shift of a pixel depends on the depth information"; lines 41-43 of column 7: "A respective z-value is assigned to each particular pixel in order to represent the depth of the scenery for that particular pixel."; lines 21-27 of column 8: "The output image can, therefore, be derived from the input image by performing a horizontal shift d (only in the x-direction) of: $d=2D(z_p/z-1)$ (1). From this formula it can be observed that the shift is proportional to the inverse of the depth. In the formula, 2D corresponds to the offset between the observation points O_1 and O_2."*) in order to preserve perceived depths of objects or other image components within the three-dimensional images when the three-dimensional images are presented at a particular screen size multiple screen sizes, or within a particular range of screen sizes" (*lines 30-33 of column 8: "Usually, the maximum parallax is restricted to being less than the offset between the observation points. This can be achieved by choosing a smaller value for 2D. For a conventional 17" display good results have been achieved by choosing 2D to be 8 pixels."*); and using the image data to reproduce a three dimensional image (*lines 39-42*

of column 5: "An embodiment of the system, according to the invention wherein the system comprises a display system for displaying the output image on a display, is characterised in that the processor is directly connected to the display system for supplying the output pixels.").

9. With regard to claim 26, Meijers discloses "wherein using the image data to reproduce the three-dimensional image includes displaying the three-dimensional image" (*lines 39-42 of column 5*).

10. With regard to claim 18, Meijers disclose "a method for providing a three-dimensional image, comprising: (*abstract: "A processor 530 generates the output image from the stored input image for `on the fly` supply to a stereoscopic display system by shifting the input pixels."*) scaling down higher resolution images to generate lower resolution images (*lines 24-27 of column 6; lines 8-14 of column 3: " Preferably, the depth converter converts and stores a plurality of successive pixels before the processor processes the pixels. Advantageously,such plurality includes ...all pixels of a line of the image..."; lines 15-21 of column 3: "...a sliding buffer with at least N locations for storing pixel values and in that the processor is operative to process successive input pixels."; lines 28-32 of column 3: "The pixels of the output image are created using only a small sliding buffer without requiring to store the output image."*); processing the lower resolution images to determine three-dimensional conversion information (*lines 35-37 of column 10: "The processor 530 determines which input pixel(s) relate to a given output pixel by using the stored pixel shift."; lines 22-24 of column 3: "...copying the respective input pixel value from the memory into the sliding buffer at a location with an offset depending on the corresponding input pixel shift..."*); and applying the three dimensional conversion information to the higher resolution images to create three-dimensional images" (*lines 25-27 of*

column 3: "outputting an output pixel value by reading a pixel value from an output location in the sliding buffer, and shifting the sliding buffer."). The three-dimensional conversion information is analogous to the shift information disclosed by Meijers in lines 35-37 of column 10.

11. With regard to claim 19, Meijers discloses "scaling down includes reducing an image file size of the higher resolution images to generate the lower resolution images" (*lines 24-27 of column 6: "The pixel value may be stored in full, e.g. using 16 or 24 bits per pixel. Alternatively, a Colour Look-Up Table (CLUT) scheme may be used to code the pixel value using less bits, e.g. 8 bits."*).

12. With regard to claim 20, Meijers discloses "scaling down includes reducing a number of pixels of the higher resolution images to generate the lower resolution images" (*lines 8-14 of column 3: " Preferably, the depth converter converts and stores a plurality of successive pixels before the processor processes the pixels. Advantageously,such plurality includes ...all pixels of a line of the image..."*).

13. With regard to claim 21, Meijers discloses "scaling down includes reducing a color depth size of the higher resolution images to generate the lower resolution images" (*lines 24-27 of column 6: "The pixel value may be stored in full, e.g. using 16 or 24 bits per pixel. Alternatively, a Colour Look-Up Table (CLUT) scheme may be used to code the pixel value using less bits, e.g. 8 bits."; lines 43-48 of column 16: "To reduce storage requirements for storing pixel values, the pixel values may be encoded using a Colour Look-Up Table (CLUT) scheme. If so, the decoding is, preferably, performed before mixing the pixels. To this end, the processor 530 comprises a CLUT 670 for performing the decoding. "*)

14. With regard to claim 22, Meijers discloses, "the three-dimensional conversion information includes depth perspective information" (*lines 35-37 of column 10: "The processor 530 determines which input pixel(s) relate to a given output pixel by using the stored pixel shift."*). One of ordinary skill in the art would recognize that the pixel shifts includes depth perspective information from equation (1) on line 25 of column 8.

15. With regard to claim 23, Meijers discloses "the three-dimensional conversion information includes hidden surface reconstruction information" (*lines 31-34 of column 9: "In contrast to different pixels of the input image being shifted to the same output pixel position, FIG. 4 shows an example wherein a `hole` occurs in the output image 430 due to the fact that no input pixel is present to fill a position in the output image 430."*). One of ordinary skill in the art would recognize the hidden surface reconstruction information comprise the pixel shift information, as lines 31-38 of column 9 shows the pixel shift value determines the number of pixels that need to be interpolated.

16. With regard to claim 24, Meijers discloses, "the three-dimensional conversion information is scaled up before it is applied to the higher resolution images" (*lines 48-50 of column 11: "The processor 530 uses a complementary decompressor 560 for restoring the original pixel shifts from the stored pixel shift representation."*).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> a. A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. Claims 1-3, 5-8, 10-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,929,859 to Meijers in view of U.S. Patent No. 6,765,568 to Swift et al.

20. With regard to claim 1, Meijers discloses "a method for providing a three-dimensional image, comprising: scaling depth information associated with objects in a three-dimensional image (*lines 4-5 of column 2: "The amount of shift of a pixel depends on the depth information"; lines 41-43 of column 7: "A respective z-value is assigned to each particular pixel in order to represent the depth of the scenery for that particular pixel."; lines 21-27 of column 8: "The output image can, therefore, be derived from the input image by performing a horizontal shift d (only in the x-direction) of: $d=2D(z_p/z-1)$ (1). From this formula it can be observed that the shift is proportional to the inverse of the depth. In the formula, 2D corresponds to the offset between the observation points O_1 and O_2."*) to preserve perceived depths of the objects when the three-dimensional image is presented at" a predetermined screen size (*lines 30-33 of column 8: "Usually, the maximum parallax is restricted to being less than the offset between the observation points. This can be achieved by choosing a smaller value for 2D. For a conventional 17" display good results have been achieved by choosing 2D to be 8 pixels."*)

21. With regard to claim 6, Meijers discloses "scaling hidden surface reconstruction information associated with hidden surface areas in the three-dimensional image to preserve reconstructions of the hidden surface areas when the three-dimensional image is presented" at a predetermined screen size (*Figure 4A; lines 31-36 of column 9: "Such hole artifacts can be removed by substituting a pixel value obtained through interpolation of the horizontally neighbouring pixel values that are available left and right of the hole. As a simple alternative, the value is substituted of the available neighbouring pixel with the greatest z-value."; lines 21-27 of column 8 as cited with respect to claim 1*). Meijers discloses the hidden surface reconstruction information comprises the neighboring pixels, which are scaled according to the method disclosed in lines 21-27 of column 8.

22. With regard to claims 1 and 6, Meijers does not disclose "selecting a screen size" and scaling the depth information when the image is presented at "the screen size or within the range of screen sizes selected." Swift et al discloses "a method for providing a three-dimensional image, comprising: selecting a screen size or range of screen sizes for a three-dimensional image" (*lines 35-39 of column 8: "Since most computer operating systems now store information on the width 1108 of the monitor image on the display monitor, it is possible to automatically adjust the spacing and size of the right and left images to avoid eyestrain."*); and adjusting parallax shift "associated with objects in a three-dimensional image to preserve perceived depths of the objects when the three-dimensional image is presented at the screen size or within the range of screen sizes selected" (*lines 1-5 of column 6: "FIG. 6 illustrates an analysis of the left and right media 500 that are extracted from the Stereoscopic 3D Media file 502, individually scaled 504, 506, recombined into the selected display 508, and then the resulting scaled*

Stereoscopic Media is displayed 510."; lines 36-42 of column 2: "Thirdly, it provides automatic and manual optimization adjustments such as parallax shift adjustment...to the stereoscopic media based on viewing hardware, monitor size...").

23. With regard to claim 1 and 6, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to incorporate selecting a screen size screen and adjusting the parallax shift to preserve perceived depths at selected screen size as taught by Swift et al by adjusting the scaling factor accordingly in the invention disclosed by Meijers. The motivation for doing so would have been to provide the optimal viewing quality of the three-dimensional image on displays other than a conventional 17" display. Therefore, it would have been obvious to combine Swift et al with Meijers to obtain the invention specified in claims 1 and 6.

24. With regard to claims 5 and 10, Swift et al further discloses adjusting parallax shift is at least partially automatically adjusted depending upon the screen size or the range of screen sizes selected" (*lines 36-42 of column 2: "Thirdly, it provides automatic and manual optimization adjustments such as parallax shift adjustment... to the stereoscopic media based on viewing hardware, monitor size..."*). At the time of the invention, it would have been obvious to a person of ordinary skill in the art to further modify the combination of Meijers and Swift et al to scale the "depth information" and "hidden surface reconstruction information" at least partially automatically as taught by Swift et al. The motivation for doing so would have been to make the system more efficient by eliminating the user's manual input at least partially. Therefore, it would have been obvious to further modify the combination of Meijers and Swift et al to obtain the invention specified in claims 5 and 10.

25. With regard to claims 2, 3, 7 and 8, Swift et al further discloses increasing and decreasing the separation (*lines 56-60 of column 10: "The current embodiment utilizes image interpolation and morphing techniques to synthesize a new right and left image that are closer together. The same technique can be used to simulate a wider stereoscopic camera separation to increase the depth effect."*).

26. With regard to claims 2, 3, 7 and 8, at the time of the invention, it would have been obvious to one of ordinary skill in the art to further modify the combination of Meijers and Swift et al to incorporate scaling the depth information up and down. The motivation for doing so would have been to provide the optimal viewing quality for displays that require greater or less depth effect than the default value, as Swift et al suggests in lines 58-62 of column 10: "The amount of adjustment can be selected by the user to suit their viewing condition and capabilities...The new synthesized right 1906 and left 1908 views will be easier to view for some users." Therefore, it would have been obvious to further modify the combination of Meijers and Swift et al to obtain the invention specified in claims 2, 3, 7 and 8.

27. Claims 11 and 12 recite limitations similar in scope to those of claims 1 and 6, respectively, which are met by the combination of Meijers and Swift et al: "scaling depth information associated with objects in a three-dimensional image, the scaling depth information being usable to preserve perceived depths of the objects within the three-dimensional image when the three-dimensional image is presented at a particular screen size or within a particular range of screen sizes"; and "scaling hidden surface reconstruction information associated with hidden surface areas in a three-dimensional image, the scaling hidden surface reconstruction information being usable to preserve reconstructions of the hidden surface areas when the three-

dimensional image is presented at a particular screen size or within a particular range of screen sizes." In addition, claims 11 and 12 recite a "machine-readable data file." Official Notice is taken that both the concept and the advantages of providing "machine-readable data file" for storing data associated with the production of a three-dimensional image are well known and expected in the art. It would have been obvious to have included "machine-readable data file" in Meijers as "machine-readable data files" are known to provide a computationally efficient way to store three-dimensional image data for subsequent computations, to obtain the benefit of not having to repeat computations each time an three-dimensional image is presented. Therefore, it would have been obvious to modify the combination of Meijers and Swift et al to obtain the invention specified in claims 11 and 12.

28. Claim 13 recites limitations similar in scope to those of claim 6. Claim 13 is rejected with the rationale of claim 6.

29. Claim 14 is met by the combination of Meijers and Swift et al, wherein Meijers discloses "the scaling is performed on an image used to create the three-dimensional image" (*lines 20-25 of column 8: "The output image can, therefore, be derived from the input image by performing a horizontal shift d (only in the x-direction) of: ... "*).

30. Claim 16 is met by the combination of Meijers and Swift et al, wherein Meijers discloses "the scaling is performed on a lower resolution version of an image used to create the three dimensional image" (*lines 24-27 of column 6; lines 8-14 of column 3: " Preferably, the depth converter converts and stores a plurality of successive pixels before the processor processes the pixels. Advantageously,such plurality includes ...all pixels of a line of the image..."*).

31. Claims 4, 9, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,929,859 to Meijers in view of U.S. Patent No. 6,765,568 to Swift et al in view of U.S. Patent No. 6,535,233 to Smith.

32. With regard to claims 4, 9, 15, and 17, the combination of Meijers and Swift et al discloses scaling of a three-dimensional image. Swift et al discloses scaling is performed using an interactive user interface (*lines 60-62 of column 10: "The amount of adjustment can be selected by the user to suit their viewing condition and capabilities."; lines 54-56 of column 10: "Some viewers may find it hard to view some images if the original cameras were separated by a large amount."*). However, the combination of Meijers and Swift et al does not disclose allowing "a user of the interactive user interface to view the three-dimensional image or representation of the three-dimensional image during the scaling of the depth information." Smith discloses an interactive user interface wherein a user of the interactive user interface to view an image during the scaling of the image(*lines 48-54 of column 2: "On receipt of time expiry events, the time of the event is held as t2. The mouse velocity is calculated as (p2-p1)/(t2-t1). The value of p2 is then stored in p1, and the value of t2 stored in t1. The appropriate display scale for the image is then calculated, inversely proportional to the mouse velocity, and applied, centered about p2."*).

33. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to provide in the user interface, disclosed by the combination of Meijers and Swift et al, viewing an image during the scaling of the information used to create that image as taught by Smith. The motivation for doing so would have been to reduce the time required for the user to reach a satisfactory configuration. Therefore, it would have been obvious to further modify the

combination of Meijers and Swift et al with Smith to obtain the invention specified in claims 4, 9, 15, and 17.

34. Claims 31-39, and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,929,859 to Meijers in view of U.S. Patent No. 5,973,831 to Kleinberger et al.

35. With regard to claims 31-36, Meijers discloses "a method for providing three-dimensional images, comprising: receiving or accessing (*lines 39-42 of column 5*) image data created by scaling depth and/or hidden surface area reconstruction information associated with three-dimensional images (*lines 4-5 of column 2: "The amount of shift of a pixel depends on the depth information"; lines 41-43 of column 7: "A respective z-value is assigned to each particular pixel in order to represent the depth of the scenery for that particular pixel."; lines 21-27 of column 8: "The output image can, therefore, be derived from the input image by performing a horizontal shift d (only in the x-direction) of: $d=2D(z_p/z-1)$ (1). From this formula it can be observed that the shift is proportional to the inverse of the depth. In the formula, 2D corresponds to the offset between the observation points O_1 and O_2."*) in order to preserve perceived depths of objects or other image components within the three-dimensional images when the three-dimensional images are presented at a particular screen size multiple screen sizes, or within a particular range of screen sizes" (*lines 30-33 of column 8: "Usually, the maximum parallax is restricted to being less than the offset between the observation points. This can be achieved by choosing a smaller value for 2D. For a conventional 17" display good results have been achieved by choosing 2D to be 8 pixels."*). Meijers discloses "hidden surface reconstruction information associated with hidden surface areas in the three-dimensional image to preserve

reconstructions of the hidden surface areas when the three-dimensional image is presented" at a predetermined screen size (*Figure 4A; lines 31-36 of column 9: "Such hole artifacts can be removed by substituting a pixel value obtained through interpolation of the horizontally neighbouring pixel values that are available left and right of the hole. As a simple alternative, the value is substituted of the available neighbouring pixel with the greatest z-value."; lines 21-27 of column 8 as cited with respect to claim 1*). One of ordinary skill in the art would recognize the feature recited in claim 6 is inherent to the method disclosed by Meijers, as the "hidden surface areas" are scaled according to the method disclosed in lines 21-27 of column 8. Meijers discloses displaying the three dimensional images (*lines 39-42 of column 5: "An embodiment of the system, according to the invention wherein the system comprises a display system for displaying the output image on a display, is characterised in that the processor is directly connected to the display system for supplying the output pixels."*).

36. With regard to claims 31-35, Meijers does not expressly disclose a "home theatre environment," "video display," "television," "television-type display," or "a television-type home video display," as recited in claims 31 through 35, respectively.

37. With regard to claims 31-35, Kleinberger et al discloses displaying a three-dimensional image on "home theatre environment," a "video display," "television," "television-type display," and "a television-type home video display" (*lines 51-59 of column 18: "Thus, according to the first embodiment of the present invention, perception of depth is obtained while displaying a series of frames each including a right and a left image, each pair of images is viewed in the manner described, the frames succeeding each other over time in a traditional manner of motion pictures, so as to produce a stereoscopic 3D-motion picture requiring no*

special optical apparatus beyond conventional means for displaying images (e.g., a television or a computer screen)."; lines 58-61 of column 22: "The system is thus provided, for example, together with sets of 3D-video tapes, and could then be used together with any standard television.").

38. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a television as taught by Kleinberger et al to display the three-dimensional images created by Meijers. The motivation for doing so would have been to display three-dimensional images associated with movies or feature films, as well as to obtain the advantage of the wide availability of television. Therefore, it would have been obvious to combine Kleinberger et al with Meijers to obtain the invention specified in claims 31-35.

39. With regard to claims 32 and 36, Kleinberger et al discloses displaying a "three-dimensional image on" a "video display," wherein the video display is "a computer monitor" (*lines 51-59 of column 18: "...so as to produce a stereoscopic 3D-motion picture requiring no special optical apparatus beyond conventional means for displaying images (e.g., a television or a computer screen)."*)

40. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a computer screen as taught by Kleinberger et al to display the three-dimensional images created by the system disclosed by Meijers. The motivation for doing so would have been to enable the viewer and user to interact with the content, in a video-game computer application or Internet browser executed web-site content. Therefore, it would have been obvious to combine Kleinberger et al with Meijers to obtain the invention specified in claims 32 and 36.

41. With regard to claim 37, Meijers discloses the limitations recited on lines 1-6 of claim 37, as shown with regard to claim 32. With regard to claims 37, 44, 45, 46, and 47, Meijers does not expressly disclose "recording the image data on a data storage device such that the data storage device can be used to reproduce the three dimensional image on a video display, television, television-type display, or television-type home video display." With regard to claims 37, 44, 45, 46, and 47, Kleinberger et al discloses "recording the image data on a data storage device such that the data storage device can be used to reproduce the three dimensional image on a video display, television, television-type display, or television-type home video display (*lines 58-61 of column 22: "The system is thus provided, for example, together with sets of 3D-video tapes, and could then be used together with any standard television."*), as recited in claims 44, 45, 46, and 47, respectively.

42. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a 3D-video tape as taught by Kleinberger et al to store the three-dimensional images created by Meijers. The motivation for doing so would have been to obtain the advantage of viewing the content created by the system without having to recompute the images or modify existing widely available equipment to perform the computations. Therefore, it would have been obvious to combine Kleinberger et al with Meijers to obtain the invention specified in claims 37, 44, 45, 46, and 47.

43. Claim 38 is met by the combination of Meijers and Kleinberger et al, wherein Kleinberger et al discloses "the data storage device is a movie storage device suitable for use in movie theatres" (*lines 58-61 of column 22*).

44. With regard to claim 39, the combination of Meijers and Kleinberger et al fails to teach "the data storage device is a server." Official Notice is taken that both the concept and the advantages of "a server" are well known and expected in the art. It would therefore have been obvious to include "a server" as the data storage device in Meijers and Kleinberger et al as servers are known to provide mass storage for use by clients with less storage capacity, thereby eliminating the need to duplicate a large amount of data in a plurality of client devices.

45. Claims 37, 38 and 41-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,929,859 to Meijers in view of U.S. Patent No. 6,198,484 to Kameyama.

46. With regard to claims 37, 41, 42, and 43, Meijers discloses the limitations recited on lines 1-6 of claim 37, as shown with regard to claim 32. Meijers does not disclose a "digital storage device." Kameyama discloses storing a three-dimensional image data on a data storage device wherein the data storage device is a digital media disk, digital versatile disk, and a data storage device that can be used to reproduce the three-dimensional image with a digital projector as recited in claims 41, 42, and 43, respectively (*lines 41-48 of column 25: "In this example, image conversion is performed with each scene by the image operations means 35. By storing on a storage medium, such as a DVD, image data that have been subjected to image conversion in advance by the stereoscopic condition calculation section of this system, the image data create means 20 can produce images that provide easy stereoscopy without the use of the stereoscopic condition calculation section.*").

47. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use digital media storage as taught by Kameyama to store the three-dimensional image

data in the Meijers system. The motivation for doing so would have been computational efficiency, as suggested by Kameyama in lines 41-48 of column 25. Therefore, it would have been obvious to combine Meijers with Kameyama to obtain the invention specified in claims 37, 41, 42, and 43.

48. Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,929,859 to Meijers in view of U.S. Patent No. 6,496,598 to Harman.

49. With regard to claims 51 and 52, Meijers discloses the limitations recited on lines 1-6 of claim 51, as shown with regard to claim 32. Meijers does not disclose, "using a communications network to transmit the image data." Harman discloses "using a communications network to transmit the image data," wherein "the communications network includes the Internet" (*lines 15-16 of column 16: " Module 4 provides for the transmission and/or storage of the stereoscopic images... 3) Digital Network—INTERNET, etc..."*).

50. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use digital network as taught by Harman to store the three-dimensional image data in the Meijers system. The motivation for doing so would have been to provide a widely available distribution means for the image data, an advantage of the Internet well known in the art. Therefore, it would have been obvious to combine Meijers with Harman to obtain the invention specified in claims 51 and 52.

51. Claims 37, 40 and 48-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,929,859 to Meijers in view of U.S. Patent No. 5,495,576 to Ritchey.

52. With regard to claims 37 and 40, Meijers discloses the limitations recited on lines 1-6 of claim 37, as shown with regard to claim 32. Meijers does not disclose storing the three

dimensional images on a data storage device. Ritchey discloses storing three dimensional images on a data storage device wherein the data storage device is a hard drive" (*lines 7-9 of column 16: "...generated images, and the like are stored in mass storage devices which may include magnetic disk drives, optical disk drives, and so forth..."; 25a shown in Fig. 1*).

53. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a hard drive as taught by Ritchey to store the images created by the system disclosed by Meijers. The motivation for doing so would have been to gain the advantage of computational efficiency by storing computations for future access in a real-time computer graphics applications such as those disclosed by Ritchey in lines 19-25 of column 15. Therefore, it would have been obvious to combine Meijers with Ritchey to obtain the invention specified in claim 40.

54. Claim 48 is rejected as being similar in scope to claim 40.

55. With regard to claims 49 and 50, Meijers discloses the limitations recited on lines 1-6 of claim 49, as shown with regard to claim 32. Meijers does not disclose "using an electromagnetic transmission medium to transmit image data." Ritchey discloses displaying a three-dimensional image (*Fig. 1 118 and 119*) "using an electromagnetic transmission medium to transmit image data" wherein the "electromagnetic transmission medium includes radio waves" (*Fig. 24 shows transmission of image data to an system 2 (shown in Fig. 1) to display a three-dimensional image 118 and 119; lines 52-54 of column 33: "An over the air radio frequency digital communications system 226 transmits 1000 to one compressed full color signals at a 60 hertz data transmission rate."; 110*).

56. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use an electromagnetic transmission medium to transmit image data as taught by Ritchey in the system disclosed by Meijers. The motivation for doing so would have been to support remote operation of a vehicle as suggested by Ritchey in lines 16-17 of column 34. Therefore, it would have been obvious to combine Ritchey with Meijers to obtain the invention specified in claims 49 and 50.

57. Claims 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,929,859 to Meijers in view of U.S. Patent No. 5,481,321 to Lipton.

58. With regard to claim 27, Meijers shows the limitations of parent claim 25. With regard to claims 28 and 29, Meijers discloses the limitations recited on lines 1-6 of claims 28, as shown with regard to claim 25. With regard to claims 27-29, Meijers does not disclose "projecting the three-dimensional image," as recited in claim 27, "projecting the three-dimensional image on movie screens," as recited in claim 28, "the three-dimensional images are projected using film media," as recited in claim 29. Lipton discloses "projecting the three-dimensional image," as recited in claim 27, "projecting the three-dimensional image on movie screens," as recited in claim 28, "the three-dimensional images are projected using film media," as recited in claim 29 (*lines 55-61 of column 6: " FIG. 1 shows the layout of the above-and-below format on 35 mm film. This has become the accepted approach in the film industry for projection of stereoscopic motion pictures. Table 1 (of FIG. 1(a)) gives the specific dimensions for a "symmetrical" version of the above-and-below format. Table 2 (of FIG. 1(b)) gives the specific dimensions for an "asymmetrical" version of the above-and-below format."; lines 52-53 of column 16: "The motion picture image is projected onto screen 213."*).

59. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to reproduce the three-dimensional image created by the system disclosed by Meijers by projecting it on a movie screen from film media. The motivation for doing so would have been to create a feature film capable of being viewed in a movie theater. Therefore, it would have been obvious to combine Meijers with Lipton to obtain the invention specified in claims 27-29.

60. Claim 30 is rejected with the rationale of claims 27-29. Claim 30 recites limitations similar in scope to claims 27-29.

Conclusion

61. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 5,907,364 to Furuhata et al discloses a distribution and display system for stereographic content. U.S. Patent No. 6,456,340 to Margulis discloses a system that performs transformations on the image data to "compensate for the characteristics of the display system."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Repko whose telephone number is 571-272-8624. The examiner can normally be reached on Monday through Friday 8:30 am -5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on 571-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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JMR

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